

Student Name:

Student id:

Sect #: Ser#:

University of Bahrain

College of Information Technology

Department of Computer Science

ITCS242: ASSEMBLY LANGUAGE PROGRAMMING

Quiz #5: HLL Implementation

QUESTION: Implement each of the following C++ codes in Assembly language.

a) `short f=10;
while (f>0)
{ cout << f << "\n";
f -= 2; }`

f sword 10

***wh: cmp f, 0
 jLE ew
 movsx eax, f
 call writeint
 call crlf
 sub f, 2
 jmp wh***

ew:

b) `void funU(short a, short b, short *f)`

funU proc a: word, b: word, f: ptr word

c) Write the prototype statement of the function header defined in b)

funU proto a: word, b: word, f: ptr word

d) `x sword ?
y sword ?
res sword ?`

Write a statement that calls funU with x, y, and res as parameters.

invoke funU, x, y, addr res

Student Name:

Student id:

Sect #: Ser#:

University of Bahrain

College of Information Technology

Department of Computer Science

ITCS242: ASSEMBLY LANGUAGE PROGRAMMING

Quiz #5: HLL Implementation

QUESTION: Implement each of the following C++ codes in Assembly language.

```
a) byte d=12 ;
do
{ cout << d << "\n" ;
  d += 4;
} while (d < 33)
```

```
d      sbyte    12
```

```
wh:    movsx    eax, d
        call     writeint
        call     crlf
        add      d, 4
        cmp      d, 33
        jL       wh
```

```
b) byte x=8, y = 4 ;
if (x > y )
    ax = y / 4 ;
else
    ax = x * 4;
```

```
x      sbyte    8
y      sbyte    4

        mov      al, x
        cmp      al, y
        jg       L1
        movsx    ax, x
        sal      ax, 2
        jmp      done
L1:    movsx    ax, y
        sar      ax, 2
done:
```

```
c) void funMe(int *isa, byte d)
```

```
funMe  proc     isa: ptr dword, d: byte
```